

**ABSTRACT OF THE DISCLOSURE**

Disclosed is a method for maintaining wavelength-locking of a Fabry-Perot laser regardless of a change of external temperature even though a temperature controller is not used, and a wavelength division multiplexing (WDM) light source using the method, as an economical light source used in a WDM optical communication field. The WDM light source comprises a Fabry-Perot laser for injecting spectrum-spliced incoherent light to amplify and output only an oscillation mode matching with a wavelength of the injected light, and a bias controlling unit for adjusting a bias current supplied to the Fabry-Perot laser to a value adjacent to a threshold current of the Fabry-Perot laser, whose threshold current is changed according to a temperature and a relationship between the injected light changed depending to a temperature and a wavelength of the oscillation mode. Therefore, the bias current having a value adjacent to the threshold current of the Fabry-Perot laser is supplied to the Fabry-Perot laser, so that the Fabry-Perot laser can maintain an excellent transmission characteristic regardless of a change of temperature even though a temperature controller is not used.